

# Exhibit C

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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EMC CORPORATION,  
Petitioner,

v.

ACQIS, LLC,  
Patent Owner.

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Case IPR2014-01462, Patent 8,041,873 B2

Case IPR2014-01469, Patent RE42,814 E

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Held: December 8, 2015

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BEFORE: MICHAEL P. TIERNEY, MICHAEL J.  
FITZPATRICK, and ROBERT J. WEINSCHENK,  
Administrative Patent Judges.

The above-entitled matter came on for hearing on Tuesday,  
December 8, 2015, commencing at 1:00 p.m., at the U.S. Patent  
and Trademark Office, 600 Dulany Street, Alexandria, Virginia.

Case IPR2014-01462, Patent 8,041,873 B2

Case IPR2014-01469, Patent RE42,814 E

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# PROCEEDINGS

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JUDGE WEINSCHENK: Good afternoon everyone.

This is an oral hearing for IPR2014-01462 and IPR2014-01469.

As you all can see, Judge Fitzpatrick is joining us remotely via video conference. In order for him to hear you, you will need to step up to the podium and speak into the microphone. Also, when you are referring to slides in your presentation, please use the slide number so that he can reference them as well.

Let's start with appearances. Who do we have for petitioner?

MR. BUROKER: Your Honors, Brian Buroker from Gibson, Dunn & Crutcher. I also have with me my colleague, Blair Silver. Andrew Pistilli, a legal assistant in our office, will be running the slide deck for me. And then in-house counsel, Tom Brown from EMC Corporation, is also present.

JUDGE WEINSCHENK: Thank you. Who do we have for patent owner?

MR. STACY: Wayne Stacy --

JUDGE WEINSCHENK: Could you step up to the microphone.

MR. STACY: For patent owner, myself, Wayne Stacy and backup counsel Britton Davis, and here at the table is Sarah Guske.

1 JUDGE WEINSCHENK: Thank you. As we indicated  
2 in our order, each side will have 45 minutes to present their case.  
3 We'll start with petitioner and follow with patent owner. Before  
4 the petitioner begins, please let us know if you would like to  
5 reserve any time for rebuttal. You may start when you are ready.

6 MR. BUROKER: Your Honor, Brian Buroker and I  
7 would like to reserve 15 minutes of time for rebuttal, if that's  
8 okay. I have hard copies of our slide deck for the two judges who  
9 are present. May I approach?

10 JUDGE WEINSCHENK: Sure.

11 JUDGE FITZPATRICK: While he is doing that, is  
12 Mr. Dill in the room? And if so, Stoney, could you give me the  
13 phone number for the bridge connection in case of technical  
14 difficulty. I take it he may not be in the room.

15 JUDGE TIERNEY: We are looking into that. We'll get  
16 it to you when we have it.

17 JUDGE FITZPATRICK: Thank you.

18 JUDGE WEINSCHENK: You can hear us now, right?

19 JUDGE FITZPATRICK: I only need that in case of  
20 kind of an emergency. So I hope to not use that number. We  
21 should go ahead and proceed.

22 JUDGE WEINSCHENK: Let's get started.

23 MR. BUROKER: Good afternoon, Your Honors. May  
24 it please the Board, my name is Brian Buroker, as I said earlier.  
25 We are here on two IPR proceedings, the 1462 proceeding which

1 relates to the '872 patent and the 1469 proceeding which relates to  
2 the '814 patent. I may use the patent numbers instead of the  
3 proceeding number. So I hope that will be okay with Your  
4 Honors.

5           Let's go to slide 4. On slide 4, Your Honors, we have  
6 just for the convenience of the Board highlighted the grounds that  
7 were instituted and the bold highlighting on the claims indicates  
8 which of the independent claims. And as you can tell from this  
9 slide, many of the instituted grounds relate to the Horst reference  
10 and only one ground relates to Bogaerts. So for time sake, I am  
11 going to focus more of my comments on Horst, but certainly I am  
12 able to answer any questions you may have about the Bogaerts  
13 reference as well.

14           So just for background, as the Board described in its  
15 institution decision, the instituted claims here relate to a modular  
16 computing system that connects computer modules to a console.  
17 And in the context of that structure, the computer modules need  
18 to communicate with elements within the console and they do so  
19 according the patent using low voltage differential signaling or  
20 LVDS. And the LVDS channels, they say, are serial.

21           So the key dispute here isn't about that structure because  
22 I think as we'll go through and show, both Horst and Bogaerts  
23 show that structure. The key dispute here is what is  
24 communicated over those LVDS channels in serial form.

1           As we demonstrated, we believe, in our opening petition  
2   and in the reply, Horst and Bogaerts disclose a computer system  
3   with CPUs that communicate address and data bits or bit streams,  
4   depending on the patent, of PCI bus transaction across the serial  
5   LVDS channel to peripheral devices that use industry standard  
6   PCI bus transactions.

7           Patent owner's defense here relies on an attempt instead  
8   to add additional limitations to claim that simply aren't present.  
9   We'll go through each of these arguments in turn, but the primary  
10   arguments are as follows. First it argues that Horst and Bogaerts  
11   do not disclose the creation of a PCI bus transaction on the CPU  
12   side of the circuit. But that's not required by the claims. And  
13   we'll go through the claims and show you why.

14           Second, it argues that the prior art does not transmit  
15   complete PCI bus transactions. But the claims don't require that  
16   either. They require communication of address and data bits of  
17   PCI bus transaction in the '814 patent and PCI bit streams in the  
18   '873 patent. Not the entirety of the transaction.

19           Thirdly, and relatedly, it argues that the prior art uses  
20   virtual addressing and not physical addressing. PCI, it says, is a  
21   physical addressing mechanism. The Horst and Bogaerts  
22   reference says it uses virtual addressing. But again, the claims  
23   say nothing about whether the addresses have to be physical or  
24   virtual. And there are a bunch of other issues that are raised both

1 in the papers and in the motions to exclude that we are happy to  
2 address on rebuttal.

3 But let's get straight to the merits here. We should start  
4 as we always do with the claim. So let's pull up slide 6. On slide  
5 6 we have put both of the independent claims from the '814 patent  
6 and the dependent claims that are at issue, and for purposes of our  
7 convenience we have highlighted in yellow the elements that are  
8 in dispute. And as you can see, there's very few elements in  
9 dispute.

10 Now, what is the language in these claims that we need  
11 to evaluate? First you have at the top non-highlighted a console  
12 with some other elements. You have a computer module that  
13 attaches to the console. And then the language of 24 says you  
14 have an ACM, which is the module that comprises a number of  
15 elements and at the bottom there's a number of steps that those  
16 elements need to perform. So one of the elements in the ACM is  
17 a north bridge. And the north bridge, it says, communicates  
18 address and data bits of PCI bus transaction in serial form.

19 JUDGE WEINSCHENK: Counsel, can you clarify for  
20 us what exactly in Horst you are referring to as being the attached  
21 computer module?

22 MR. BUROKER: If you can go over to slide 20, if you  
23 would, please, so here we've taken all of the elements of claim 24  
24 and I have got a similar slide for 31 and we've tried to color  
25 coordinate. So the attached computer module ACM is what is



1 highlighted in blue. So on the top left of this slide we've got  
2 Figure 2 which is sort of a higher level view of the circuit in  
3 Horst. And then Figure 7 gives an example of one such  
4 implementation. So Figure 7 in the bottom left-hand corner is  
5 one of the three modules that is shown in Figure 2 on the left.

6 So where it says CPU and memory in each of the boxes  
7 on the top, you would replace that effectively with what you see  
8 in Figure 7. So that's your attached computer module. And the  
9 detail in Horst says that those modules connect into the console  
10 via the console's backplane. Does that answer Your Honor's --

11 JUDGE WEINSCHENK: It does. I think what I  
12 understand one of patent owner's arguments to be here is that if  
13 we are looking at what you have highlighted as the attached  
14 computer module, where in there do we have a north bridge that  
15 communicates a PCI bus transaction?

16 MR. BUROKER: So the north bridge is what we've  
17 highlighted in red. It's known as the TNet processor interface.

18 JUDGE WEINSCHENK: Right. And it looks like you  
19 have a TNet transaction but where do you have a PCI bus  
20 transaction?

21 MR. BUROKER: So the PCI bus transaction is  
22 communicated from the CPU out to the PCI device. In Figure 2  
23 you can see that one of the elements in the green box along the  
24 right-hand side of the green box is a PCI interface with a PCI  
25 controller and then there's a long line to indicate that there are

1 additional PCI devices that can be connected there. So the flow  
2 of data would be from one of the CPUs using the dashed blue  
3 lines down to the PCI device. So there would be a  
4 communication. And what we know, if you go to slide 35, the  
5 specification -- I'm sorry, the text of Horst teaches us that TNet  
6 allows all of the CPUs to communicate with any other CPU or  
7 I/O controller in the network and it can issue read and write  
8 portions to each other's memory. So one of the I/O controllers,  
9 going back to slide 20, if you would -- actually, stay right there.  
10 It's on the right-hand side as well. In the right-hand side of this  
11 slide 35 you see the diagram Figure 2 and you can see on the  
12 right-hand side that there are several different I/O controllers that  
13 are given as examples. One of those I/O controllers is the PCI  
14 controller.

15           So this is teaching us that the TNet allows  
16 communication from the CPU over TNet to the PCI devices.  
17 When the two communicate with a PCI device you necessarily  
18 need to transmit address and data bits of PCI transaction. You  
19 don't need to transmit a complete PCI transaction. If Your  
20 Honor's question was where is there a PCI transaction, the answer  
21 is pieces of it can be sent from the CPU down to the PCI device,  
22 and that would be bits of a PCI transaction, and then the PCI  
23 device can respond to that, for example, if it was a read request  
24 from the CPU. The CPU could be asking the PCI device, tell me  
25 what's in your memory. I'm going to give you a read request.

1           The response from the PCI device would be, Here is my  
2 information, and it would be sent back up through the LVDS  
3 channel back up to the CPU where the north bridge resides.

4           JUDGE WEINSCHENK: Can you explain to me  
5 logistically how this works. For example, do you have something  
6 in the CPU that has a complete PCI address of some device down  
7 on the bottom right and then gets translated or changed into  
8 something that can be transmitted over the TNet and then get  
9 translated back into a PCI? Is that how it works?

10          MR. BUROKER: So Horst describes that you would  
11 have translation tables that would allow you to translate between  
12 the virtual addressing that's available in TNet and the addressing  
13 of the destination. So for example, in the bottom left-hand corner  
14 this is testimony from Mr. Young that says a person of skill in the  
15 art would know that you could transmit over TNet using read and  
16 write operations.

17          If you go to slide 36, there's text in the left-hand side of  
18 slide 36 from the Horst reference that says the TNet address  
19 which is one of the fields in the TNet packet which we see on  
20 Figure 5 is a 32-bit window into the destination's address space.  
21 So the destination of a communication from the CPU to the PCI  
22 would be the PCI. So that TNet address would then allow you to  
23 fill in PCI address information into the TNet packet so that it can  
24 be interpreted at the processor unit.

1           And so the processor interface unit in this diagram  
2   would indeed need to be able to translate from the TNet packet  
3   into the PCI packet and vice versa. So, yes, there's an address  
4   translation. We don't dispute that there is going to be some sort  
5   of address translation that's done because the addressing  
6   mechanism to route packets in TNet is done through the header.  
7   Not the address field.

8           JUDGE WEINSCHENK: What you are saying is the  
9   CPU knows the address of the PCI device that it wants to access.  
10   That gets translated into a TNet which is in a slightly different  
11   format, perhaps, and then it gets retranslated back to PCI on the  
12   other end?

13          MR. BUROKER: Right. And the same would be true  
14   on the reverse side. If you are routing a packet from the PCI  
15   device up to the CPU, that TNet processor interface has to have a  
16   translation table so that it can receive the PCI transaction, put the  
17   relevant information into a TNet packet, route it through the TNet  
18   network up to the relevant CPU.

19          So if we could go to slide 36, okay, so what does the  
20   patent owner here argue as to why the claims are not met? First  
21   of all, it argues that the north bridge or peripheral bridge does not  
22   communicate address and data bits of PCI bus transaction  
23   because there is no PCI bus transaction created on the CPU side.  
24   Now, Your Honor, as we've just discussed, we believe the  
25   reference teaches a person of skill in the art how to do that, to

1 create a PCI bus transaction or at least the elements of it on the  
2 CPU side.

3 But more importantly, if you look at slide 6, looking at  
4 claim 24, let's look at the north bridge element, all that's required  
5 and there's two pieces to it, because there's the second clause  
6 down there that gives further clarification. So you have got a  
7 north bridge that's connected to the CPU. The north bridge  
8 communicates address and data bits of PCI bus transaction in  
9 serial form. It does not say where that PCI bus transaction has to  
10 come from and it does not say where it is originated. So there is a  
11 myth that this PCI bus transaction has to be created at the CPU.  
12 It could be. Communication is a two-way mechanism. It could  
13 be that the only PCI bus transactions created are in that peripheral  
14 component that we pointed to. The north bridge would still  
15 communicate the bits of a PCI bus transaction when it receives  
16 them.

17 So there is sort of two theories and ways to read Horst,  
18 one of which is the CPU certainly knows how to create or at least  
19 send the data that will be used to formulate a PCI transaction  
20 through the translation table. The second way of viewing it is  
21 that on the reverse side when the PCI but transaction is created in  
22 the bottom right-hand corner of Figure 2 and pushed up toward  
23 the CPU, that when the north bridge receives it, it has  
24 communicated address and data bits of a PCI bus transaction by

1 receiving them. So that's our view as to why the first argument  
2 they raise doesn't have any merit.

3 JUDGE WEINSCHENK: Let me ask you this. Doesn't  
4 the term "transaction" imply that there's an exchange between two  
5 PCI buses? If we were to have a PCI bus transaction, wouldn't  
6 that be information being sent from one PCI bus to another PCI  
7 bus? Doesn't that imply that we have two of them, one on each  
8 side?

9 MR. BUROKER: I don't believe so, Your Honor. Even  
10 if you go back to 35, I think, slide 35, on the right-hand side what  
11 you see is there are multiple PCI devices along that right-hand  
12 side. There's a PCI interface, a PCI controller and that long line  
13 signifies that there could be many. And the text talks about many  
14 different PCI devices. So what we are talking about is a PCI  
15 device that would create a transaction, put it on the PCI bus and it  
16 would be received by the PCI interface. So you would have two  
17 parties to that transaction. And then the PCI interface would do  
18 its job to translate various information into the TNet packet to  
19 route it up to the CPU.

20 JUDGE WEINSCHENK: Are you suggesting that as  
21 long as there's information sent across the TNet that can be  
22 translated into a PCI transaction, that you have met the claims?

23 MR. BUROKER: Actually, less than that, Your Honor.  
24 The way this claim, they chose to write it, go back to slide 6  
25 again, please, is all you need to communicate are address and data

1 bits of PCI bus transaction. We agree that there has to be a PCI  
2 bus transaction somewhere, but the only thing that needs to flow  
3 across that LVDS channel are address and data bits. You don't  
4 have to have the complete transaction. You don't have to have  
5 the complete configuration file that a PCI bus transaction might  
6 have. You don't need the command information or the byte  
7 enables. That's not what they chose to claim. If they had wanted  
8 to claim that, they could have said conveying the PCI bus  
9 transaction in serial form. Or there's a bunch of different ways  
10 they could have claimed it.

11           If we can go to slide 7, just so we are clear, the  
12 language in claim 54 of the '873 is slightly different, we admit,  
13 but there again, it's actually even broader because what has to be  
14 transmitted there is an encoded serial bit stream of PCI bus  
15 transaction. So you just need a bit stream of the transaction. It  
16 doesn't even specify that it has to be address or data. We know  
17 that from looking at dependent claim 61 which is highlighted on  
18 this slide 7 as well that specifies that the encoded bit stream  
19 comprises encoded PCI address and data bits.

20           So claim 54 has got to be broader than claim 61 and  
21 covers a bit stream that's not even address or data bits. So that's  
22 really the third response to patent owners was we read their  
23 argument as requiring that you have to transport across the LVDS  
24 channel the entire transaction, and that's not simply what they  
25 claimed.

1           So another argument that they make and that the patent  
2 owner makes in its submission is that -- and this is related to what  
3 we have been discussing, that the only PCI bus transaction that's  
4 ever created is in the bottom right-hand corner of Figure 2. Let's  
5 go to slide 35 again, please. So they would confine the PCI bus  
6 transaction in Horst to the bottom right-hand side of your screen  
7 of Figure 2. And again, there's a difference then between what is  
8 a PCI bus transaction and the bits of it. And the TNet packet  
9 would necessarily include some of the bits. It certainly includes  
10 the data. There's no dispute about that. If you are going to  
11 transmit, if you have a PCI device on the right-hand side and it  
12 wants to write its memory up to the CPU, you are necessarily  
13 going to carry the data with it. There's no dispute about that. So  
14 the data bits piece of the claim is virtually undisputed. The only  
15 dispute here is whether there's an address that's transmitted. And  
16 we know that the bits of the address would necessarily be  
17 included.

18           Now, how do we know that? Let's look at slide 38. So  
19 in the initial petition, our expert, Mr. Young, looked at Horst and  
20 testified that to communicate with peripherals, including a PCI  
21 bus, the interface, he's talking about that PCI interface or the  
22 interface on the peripheral transmits address and data bits from  
23 the peripheral over the TNet links. And in the reply, because  
24 there was a dispute about how this mechanism would work in



1 view of Figure 5, Figure 5 we think pretty clearly says that the A  
2 field is the window into the destination.

3 Mr. Young explained, well, you would fill in the TNet  
4 transaction address, that A field, with a 32-bit PCI address. You  
5 need to send some information to allow the other side to figure  
6 out how to respond to it anyway. Just fill in the address field in  
7 the TNet packet with the address of the PCI bus transaction.  
8 That's one way of doing it. A person of skill in the art would  
9 recognize from Horst.

10 Now, he admitted on cross-examination from patent  
11 owner, and that's in their slides, I'm sure we'll get to it, that it's not  
12 explicitly stated. Again, this is an obviousness analysis and he, as  
13 a person of skill in the art, said that's the most logical way to do  
14 so.

15 JUDGE WEINSCHENK: I don't think there's any  
16 question, right, that the actual information that's sent on the  
17 LVDS channel doesn't have to be in the PCI industry format,  
18 right? It's going to be changed because it's going to be serial.  
19 The question is, would there have been a PCI address in the CPU  
20 to start with? Do we know that?

21 MR. BUROKER: Well, it doesn't have to be in the  
22 CPU because remember, it only has to reach the north bridge.  
23 Claim 24 just says that the north bridge which is connected to the  
24 CPU communicates it. So at minimum the way the claims are

1 written, you just have to get the PCI information to the north  
2 bridge is our view of how you read the claims.

3 JUDGE WEINSCHENK: Do we know that there's  
4 going to be a 32-bit PCI address in the north bridge at some  
5 point?

6 MR. BUROKER: Well, our view is that that's the most  
7 logical way to do it. If you are going to transmit address  
8 information from the PCI bus transaction, you have got 32 bits to  
9 use and you've got a 32-bit address, why would you throw  
10 anything away?

11 But even if you argue there's some sort of virtual  
12 addressing, there's testimony from patent owner's expert that in  
13 virtual addressing, you would perhaps throw away some of the  
14 bits and use the 12 most significant bits or least significant, the  
15 12 bits on the right of the packet. You have at least transmitted  
16 12 of the bits. Again, the claim just says that you communicate  
17 address and data bits. It doesn't say all of the address and data  
18 bits. It just says address and data bits. Our view is that that's the  
19 natural reading of the claim.

20 I know there's an argument that this is a new argument  
21 that we've presented in reply, but candidly, that's just the way the  
22 claims should be read and that's the way we read them when we  
23 did the petition consistent with what Mr. Young in the top left  
24 said in his opening petition -- in the declaration that goes along

1 with the opening petition that all you have to do is transmit  
2 address and data bits.

3 JUDGE WEINSCHENK: If we are operating under  
4 patent owner's position that some of the data bits get thrown away  
5 before it's sent over the TNet, do those address bits get added  
6 back in on the other side so that you can actually locate where  
7 you want to go in the PCI device?

8 MR. BUROKER: Right. So in order for that all to  
9 work, to throw away any bits in a virtual addressing environment,  
10 there has to be an address table that allows you to complete and  
11 figure out where those bits are intended to go. So exactly. Our  
12 view is that a person of skill in the art would know that you have  
13 got to create the PCI address somehow. You can either send all  
14 32 bits of the address or you can send some part of the address if  
15 there is a lookup table on the receiving end. So if there's a lookup  
16 table in the receiving end, there's a configuration that takes place.  
17 And Horst talks about a configuration. So even if you did have to  
18 have all 32 bits according to this claim, which we say you do not,  
19 we believe there's a sufficient teaching in this reference that a  
20 person of skill in the art would view that to be an obvious way of  
21 solving the problem.

22 That gets to my, what I view as their fourth argument  
23 and I think we've largely covered this, but I want to make sure I  
24 touch on it. They make an argument about, well, the prior art,  
25 Horst and Bogaerts too, but Horst in particular uses virtual

1 addressing and PCI's physical addressing. But the claims don't  
2 say physical addressing. They don't say you can't use virtual  
3 addressing. Again, it goes back to the claims which only says  
4 you have to transmit address bits of PCI bus transaction.

5           So let's look again at slide 30. So here is where we've  
6 put together some testimony from their expert in a quote from the  
7 patent owner's response which lead us to believe that they are  
8 arguing that not only do you have to have all of the address bits  
9 but you have to have other things from the PCI bus transaction  
10 for the claim to be met. In the top left-hand corner they suggest  
11 that you can't have a PCI bus transaction unless you send the  
12 configuration information. The next one down, Dr. Lundenstruth,  
13 their expert suggests that the claims require all address and data  
14 phase information including the PCI data and byte enables during  
15 the data phase. And there's several other quotes we've got here  
16 on the slide. Again, we don't believe that that's a requirement in  
17 these claims and we think that all the Board needs to find is if  
18 there's transmission of some bits of address and data, and we get  
19 that by looking simply at the claims.

20           Go to slide 31. Again, we've highlighted the relevant  
21 portions here on slide 31 of the claims which don't ever say you  
22 have to submit all of the address or data bits. Earlier I mentioned  
23 the claim differentiation point between claim 54 of the '873 patent  
24 and claim 61 of the '873 patent which suggests that certainly for  
25 the claim 54, at most, you have to have a bit stream and it doesn't

1 even have to be address and data. So again, we think that that  
2 argument undermines their theory that you have to have all  
3 address bits.

4 If there's no further questions about Horst, I wanted to  
5 quickly touch on a few points about Bogaerts.

6 JUDGE WEINSCHENK: That's fine.

7 MR. BUROKER: Could we go to slide 53. So the  
8 analysis for Bogaerts is very similar to what we just talked about  
9 but let me reorient you. Instead of having the TNet network,  
10 what you have in those large circles in the top left Figure 13 that's  
11 shown is the SCI network.

12 JUDGE WEINSCHENK: I actually have a question  
13 before we get into too many details here. Are you relying on  
14 Figure 13 embodiment or Figure 15 embodiment or are you  
15 arguing they should be combined? I'm not sure I follow the  
16 argument that you are making here because you kind of cite to  
17 both of them.

18 MR. BUROKER: Your Honor, Figure 13, we believe,  
19 shows all of the elements of the claim. Figure 15 is another  
20 embodiment where they have taken a Pentium chip and included  
21 various components so it's an alternative attached computer  
22 module and it teaches that it can be plugged into an SCI ring.  
23 And so Your Honor, I think it's a little bit of both. We are  
24 arguing Figure 13 discloses everything.

1           We are also arguing that it would have been obvious  
2 because this is all one project to take the module of Figure 15 and  
3 plug it in either in substitution with one of the blue boxes on the  
4 top left or in addition to. And the idea was that you could add  
5 many, many of these modules in Figure 13. So the idea, yes, is  
6 that for certain elements, for example, there's an argument that  
7 none of the boxes in Figure 13 is there a PCI bus transaction  
8 created on the CPU side. Again, we said we don't think that's a  
9 requirement, but if you look at Figure 15, that module, there is a  
10 PCI bus there. There's a LAN component connected to that PCI  
11 bus. If it created a PCI bus transaction, that is on the CPU side of  
12 the module. It's in the CPU module.

13           So our argument is if that is a requirement, then  
14 Figure 15 solves that problem. And we draw the box around two  
15 of the components and say that's your peripheral bridge. And it  
16 does have one of the elements of this claim, 31, is that there has  
17 to be a connection between the peripheral bridge and the CPU  
18 without any intervening PCI bus.

19           So you see the CPU in orange. You see the line that's  
20 going down in the middle of the blue box. In between that and  
21 the red box, that is a CPU bus. It's hard to see, but in the bottom  
22 right hand of Figure 15 off to the right, it says CPU bus. So that  
23 is trying to indicate that that line on the far right is a CPU bus. So  
24 that's why we cited to Figure 15 to say if that is something they

1 say is required, which we don't believe it is, then Figure 15  
2 plugged into Figure 13 solves that problem.

3 JUDGE WEINSCHENK: Is there somewhere you can  
4 point me in your petition where you argued that it would be  
5 obvious to plug one from 15 into one from 13?

6 MR. BUROKER: Well, in the reply we certainly cited  
7 to Figure 15 and we cited Figure 13 together and said that they  
8 were different embodiments that could be -- teachings about how  
9 you would use the disclosure of Bogaerts. I would have to go  
10 back on a break and see if we specifically said that in the petition.  
11 It may have been that we raised that in the reply in response to  
12 the argument that patent owner made about needing to have a  
13 CPU side PCI bus transaction.

14 JUDGE WEINSCHENK: Okay.

15 MR. BUROKER: So I'm at a good stopping point. My  
16 colleague tells me I have got about 15 minutes. Why don't I rest  
17 and save my remaining time for rebuttal.

18 JUDGE TIERNEY: I would like to ask a few  
19 questions. There was an issue raised about whether Bogaerts is  
20 actually prior art. The issue I would like you to address is courts  
21 have looked to whether references are indexed, cataloged,  
22 keyword searchable at the time and critical date. Can you please  
23 explain how Bogaerts was made available in such a fashion that  
24 one could actually have done that.

1           MR. BUROKER: So actually what patent owner  
2 submitted was the indexing record from the CERN Library which  
3 shows that the item was available in the CERN Library. That  
4 record suggests that it is an indexed and cataloged database.  
5 There is the librarian of ours that submitted the document that  
6 says at least as of today that's a cataloged and indexed database.  
7 We do not have somebody from the CERN Library who testified  
8 that -- it's a Swiss entity and they were not willing to cooperate  
9 when asked to provide a declaration. But that's, we believe,  
10 sufficient evidence that it is in a library that has a  
11 keyword-searchable field, according to that screen shot, to prove  
12 printed publication and availability.

13           In addition, Your Honor, that's one of the reasons why  
14 we submitted or created additional information that was  
15 submitted into evidence which was the Wayback Machine  
16 evidence to suggest that the article was also available on the  
17 Wayback Machine which we believe is sufficient to show public  
18 availability and widespread distribution. So all of that totality of  
19 information, we think, shows that the article was searchable in the  
20 CERN Library or via the Internet from the server that's got the  
21 URL that's in the Wayback Machine.

22           JUDGE TIERNEY: Refresh my recollection, at what  
23 point are we saying that it was publicly searchable? I understand  
24 we have evidence to show it's searchable today. I understand  
25 there's evidence to show that it was publicly available in the sense



1 that if you knew it existed, you could go and locate it is what I've  
2 seen. But as to when it became publicly searchable by just  
3 keywords, titles, indexing, can you direct me to what piece of  
4 evidence shows that?

5 MR. BUROKER: I think the best piece of evidence on  
6 that issue is the document itself which says the reports are --  
7 earlier reports have been publicly available, the document being  
8 provided to a library and reported in the database. Then we have  
9 the CERN database record which we believe has indicia to show  
10 that it's searchable.

11 Now, do we have anybody who can swear that in 1996  
12 it was searchable? I don't believe that's in the record. I'll check at  
13 a break to see if my colleague will correct me, but I think that's  
14 the most evidence I can point you to.

15 JUDGE TIERNEY: Thank you.

16 JUDGE FITZPATRICK: Could you keep that  
17 statement but with reference to the exhibits. You referred to the  
18 documents.

19 MR. BUROKER: I'm sorry.

20 JUDGE FITZPATRICK: Exhibit 1013 you referred to  
21 a statement, I think, that appears on there somewhere or  
22 reportedly does. Could you find that.

23 MR. BUROKER: Pull up slide 62, please. They have  
24 got the Exhibit Numbers on. So -- no, go to the next one, 63. So  
25 this is going to be exhibit --

1 JUDGE FITZPATRICK: It may be this document. I  
2 have got multiple files out. Maybe this document was filed as a  
3 different exhibit. So let's use the 1462 case. Let's use references  
4 from that case.

5 MR. BUROKER: Your Honor, what I have got on the  
6 screen is the 1469 Exhibit 2011 which is the declaration of Scott,  
7 who is our librarian who attached a copy of the CERN database  
8 printout. And that of course is from 2014/'15. It's not from 1996.  
9 But that is the index which says it was received --

10 JUDGE FITZPATRICK: I'm catching up to speed. I  
11 got the 1469 set of documents out and I see Bogaerts is  
12 Exhibit 1011. And what exhibit is the declaration?

13 MR. BUROKER: 2011.

14 JUDGE FITZPATRICK: Okay.

15 MR. BUROKER: So that record shows that at least  
16 currently, granted it doesn't show what was available in 1996, but  
17 that there is subject categories, detectors and experimental  
18 techniques that could be used to search for it. There were  
19 keywords and subject matter indexing related to this document in  
20 the library. And the top left-hand corner shows a search button  
21 right under where it says CERN Document Server. There's a  
22 search button. So it indicates that as of today it's searchable. I  
23 grant that we don't have evidence that shows in 1996 that it was  
24 searchable, but we believe there's other indicia that it was  
25 publicly available to bolster what we have pointed you to.

1 JUDGE FITZPATRICK: Thank you.

2 MR. BUROKER: Thank you. I'll reserve the  
3 remaining time.

4 MR. STACY: So with your permission, whenever you  
5 are ready?

6 JUDGE WEINSCHENK: Whenever you are ready.

7 MR. STACY: The first thing I want to show you is  
8 Exhibit 2011 at 439. This is the same document that was up. It's  
9 from the Spencer Scott declaration. I want to see if I can answer  
10 the question for you. I don't know how to zoom this in. There we  
11 go. So this is the library card. In my generation it was the card  
12 catalog. And so this is the CERN Library card. And Mr. Buroker  
13 wants to point to that submitted by date October 2, 1996.

14 Well, we asked the author what that date meant and he  
15 said that's the date it went to the committee. He had no  
16 knowledge of it ever going to the library. He actually even  
17 checked with one of the other coauthors, Hans Mueller,  
18 confirmed the same thing. That is the submitted date. So that's  
19 when it went to the committee.

20 What does the CERN Library actually tell us about the  
21 date it was indexed in CERN? It's that bottom, record created  
22 12/18/2014. We know that's the card catalog date because  
23 Mr. Scott downloaded it much later. That is the date that the  
24 indexed version of Bogaerts was first available.

1           And keep in mind what Bogaerts we are talking about  
2 here. You don't get to run all of these together. They led with  
3 Bogaerts 1. And that was the one that had that bar code up in the  
4 upper left-hand corner, if you remember. And they represented to  
5 this Board that that bar-coded version was available, publicly  
6 available in 1996. There's absolutely no evidence of that. That  
7 bar-coded version, the first time we can date it is to 2014. So  
8 that's the first time we know that that document was searchable.

9           And they didn't try to swap out Bogaerts 1 for  
10 Bogaerts 2. If you remember all that stuff about the sunshine  
11 server and that second place and it might have been available in  
12 '96, made no effort to swap it out. So the only Bogaerts we are  
13 talking about is the file-stamped copy. It was searchable in 2014.

14           What do we know about the other Bogaerts? We know  
15 that their expert went to that site, tried to download the PDF.  
16 Wasn't available, that Bogaerts 2. PDF wasn't available. Instead  
17 it was eight postscript files. I don't know if any of you have ever  
18 seen a postscript file, but it's gibberish. Then what he was saying  
19 is that somebody would take these eight postscript files, stitch  
20 them together and that would be publicly available.

21           We asked him, he's the expert, is a postscript file text  
22 searchable? No idea. So all we know is we've got some  
23 postscript files sitting on a personal server, not even the CERN  
24 server, because again, our expert, one of the coauthors, knew  
25 where it was sitting. It was sitting on Hans Mueller's personal

1 server. Nothing about that is indexable. Nothing about that is  
2 publicly available.

3 JUDGE WEINSCHENK: Was there a link to that  
4 server, though, from the main CERN website, though? I think  
5 there's evidence that shows you could go to the CERN website  
6 and it would link to that server.

7 MR. STACY: There is evidence that you could go to  
8 the RD24, that's the group, home page. There is absolutely no  
9 evidence in '96 you could link through. What you could do is a  
10 big crawler could go find that that postscript file was there.  
11 That's the only evidence we have that that was actually publicly  
12 available or searchable or indexed in any way. Otherwise it's just  
13 a giant set of postscript file mess, eight files sitting on a personal  
14 server that could be accessed if you knew where to go. No  
15 evidence it was publicly searchable or indexable. So no evidence  
16 of accessibility.

17 But you can't even get there because they led with that  
18 file-stamped copy and the Board instituted on it. Now, we heard  
19 for the first time they actually talked to somebody at CERN. But  
20 if you remember back, they didn't ask you to get a deposition.  
21 They didn't ask you for a declaration. There's a copending  
22 District Court case. They had the power to go get a subpoena if  
23 they wanted to or at least try. So we shouldn't be playing this  
24 guessing game now in Bogaerts. It was their responsibility.

1           So the next thing I want to do is answer a question from  
2 you, Judge Weinschenk, that was asked about the PCI. And to  
3 get us kind of back to where we were, I wanted to start with slide  
4 49. So slide 49 is the four-byte TNet address. And the question  
5 is what goes in that address and then what happens up at the  
6 CPU?

7           Well, first of all, as Mr. Buroker promised, we are going  
8 to get there quickly. We asked their expert, where in the TNet  
9 document does it say that the PCI address can be substituted in?  
10 He was very forthcoming. There's nowhere in the Horst -- and  
11 remember, Horst is TNet. So nowhere is it there. So then they  
12 have to go to the obviousness argument.

13           But Judge Weinschenk, you asked about how does the  
14 procedure work? What does the format look like? Well, this was  
15 the whole fight over that withheld document and the reason this  
16 was so troublesome. So this withheld document is ServerNet 2.  
17 ServerNet 2 is ServerNet 1. ServerNet 1 is the same as TNet, and  
18 it says it right in the document. The same set of people drafted  
19 the Horst document as the ServerNet 2. There's an overlap in that  
20 working group. So when you look at ServerNet 2, you can see  
21 exactly how that TNet process works.

22           What's important is the bottom. See that local physical  
23 address? When you are starting from whatever side, the first time  
24 that you have a true physical address is at the end of the process.  
25 And remember, a PCI address must be a physical address. That's

1 the standard. It's always a physical address. Never a virtual.  
2 That's why it matters. And we've heard some argument about the  
3 claims don't say virtual or physical. Yes, they do. PCI address is  
4 a physical address by definition.

5 So when in ServerNet or TNet or Horst, however you  
6 want to refer to it, does the physical address first exist? Keep in  
7 mind their expert wasn't shown this document. We weren't  
8 shown this document. We had to dig it out of a pile of litigation  
9 stuff that they turned over to us. But what we know is you start  
10 up front with the ServerNet address. You run it through an  
11 address validation and translation table and at the end you get the  
12 local physical address.

13 JUDGE WEINSCHENK: Why is that problematic? If  
14 you are sending address bits over the TNet that can -- maybe they  
15 are encoded in some way but on the other end you could decode  
16 them and get a PCI address, why is that not covered by the  
17 claims?

18 MR. STACY: It absolutely doesn't because you are  
19 never starting with an address here. So their expert describes it  
20 before he changed his position in his original declarations, he  
21 describes it as Scrabble cubes. I've got a PCI address, I have got  
22 it spelled out here, 32-bit word, and I take it, I put it on my serial  
23 line. So that's the whole point. I'm going from parallel, I'm  
24 putting on a serial line. And on the bottom end I have got to be

1 able to reassemble my word. I have got my rules. I know what to  
2 do.

3 On all of the T Nets, all of the Bogaerts, they all have  
4 the same issue is that there is no physical address that's then  
5 scrambled and then put back together down here. You start with  
6 a made-up virtual address, manipulate it and then you have some  
7 kind of smart device, it's those buses in T Net, you see it in those  
8 figures on what goes on the bottom side by the PCI device that  
9 creates the PCI address for the first time.

10 JUDGE WEINSCHENK: I guess I'm struggling to  
11 understand though why that matters, right. Why do you have to  
12 have a physical address to start with? Why can't it be virtual or  
13 some other address? As long as it's information that you could on  
14 the other end translate into a PCI address, why does that not meet  
15 the claims? I think we agree that what you are transmitting  
16 across the channel doesn't actually have to be in perfect PCI  
17 format, right? You can change it.

18 MR. STACY: Format, I agree. I do not agree that the  
19 content can be changed. The content has to be the same. In other  
20 words, think of my Scrabble cubes. I have got a word here. I can  
21 jumble it, do whatever I want to in the middle. But on the back  
22 end I have got to be able to build that same word again. That's  
23 what the claims require. If you don't do that, you have destroyed  
24 your PCI standard. You have destroyed the very purpose of this  
25 invention. The whole point is you start PCI, whether you start



1 here or down here, it makes no difference, whether it's the CPU  
2 or the printer. You start with the PCI address that's in this  
3 parallel slow form, serialize it and then take it back to the PCI  
4 form at the other end.

5 JUDGE TIERNEY: I would like to go back to the  
6 language of the claims because I think we are reading a few  
7 things in and I want to make sure it's okay to do so. Let's start  
8 with the '873 patent claim 54. We are talking about encoded  
9 serial bit stream. Why do I want to read in the words physical  
10 address?

11 MR. STACY: It is an encoded serial bit stream of  
12 peripheral interconnect bus transaction. The Board has already  
13 said that the PCI is important, that it's part of it. So you have got  
14 to go to the standard. The PCI standard does not allow a virtual  
15 address. So you would be reading PCI standard out of claim 54.  
16 So in other words, if you put a virtual address in, it's no longer a  
17 capital PCI bus transaction. It's something completely different.  
18 And that's just straight out of the standard. Dr. Lindenstruth  
19 references that several times and we'll talk about that.

20 Now, there's something interesting here. They keep  
21 going back to this claim differentiation doctrine on claim 61  
22 which showed up in the reply for the first time. You heard it the  
23 same time we did, but I would like to the address that.

24 JUDGE TIERNEY: Before we move on, you  
25 mentioned that basically you have to have all of the content

1 transferred. There was an argument, however, that said the 32  
2 bits, some could be not completely moved along. Are you taking  
3 the position that your claim requires every bit of information has  
4 to be carried along for the physical address?

5 MR. STACY: Yes.

6 JUDGE TIERNEY: And the claim says that because?

7 MR. STACY: Because you are getting the address bits  
8 of the PCI bus transaction. It's like saying a telephone number. It  
9 indicates you are getting the full telephone number. If you take  
10 less than 32 bits, you don't get to the printer.

11 JUDGE TIERNEY: Actually, let's take a hypothetical.  
12 Here in the Patent Office we sometimes go with extensions: 2,  
13 dash, any number of 1000. So we don't have the full number,  
14 571-272-1000. We just send the number 2, dash 1000. That still  
15 can be sufficient information for us to understand who to call. Do  
16 we require a new claim that the full address has to be conveyed or  
17 does a sufficient amount of information convey what is sufficient  
18 to identify that address?

19 MR. STACY: So within the Patent Office, you have a  
20 standard. You have a phone book. You have procedures that you  
21 put out there. You said it's 2 and then your four-digit. You could  
22 have made it eight and your four digits, but somebody somewhere  
23 wrote down what your procedures are going to be. That's the  
24 Patent Office telephone standard.

1           Here we have the PCI standard. And there are two in  
2 exactly two different addressing schemes. You see it every day  
3 when you buy a laptop, 32-bit processor or 64-bit. This was the  
4 days of the 32-bit when this was drafted. But the PCI standard is  
5 32 or 64. You send 31, it breaks. You have to have the full  
6 piece.

7           JUDGE WEINSCHENK: So what if you sent 31, like  
8 we send a shortened number here and it knows at the other end to  
9 add in the 32nd bit? Doesn't that convey sufficient information  
10 for a PCI bus transaction?

11          MR. STACY: No, it absolutely doesn't. Because what  
12 you are doing is saying that the transaction happens at the end.  
13 The printer prints and that's true. The printer prints. My CPU  
14 says print this document. The printer prints. But the whole point  
15 of this invention and these claims is that they are centered around  
16 dealing with a standard. All of the computers out there have PCI.  
17 And so the point was, how do you speed up PCI? And the point  
18 is you take it from parallel to serial and then back to parallel.

19          And that's the point. If you somehow say, well, okay,  
20 we are just going to do away with PCI, that's not the invention  
21 and that's like saying I'm going to buy a new Windows machine  
22 and I'm not going to use PCI. I'm just going to use a 30-bit rather  
23 than 32. It doesn't work. You violated the standard. Just like  
24 internally, if you don't know to put 2 instead of 8, your four-digit  
25 number does you no good. You have to have the PCI standard.

1           And the Board has already gone to that in saying that  
2 PCI isn't part of the standard. By the way, when you looked at  
3 their expert and we asked their expert, what do you think about  
4 the Board's construction? He said it's broad, it's reasonable and  
5 it's not inaccurate. That's probably the best you'll ever get from a  
6 professional expert. I didn't press him to say will you admit it's  
7 accurate but he just kept saying it wasn't inaccurate. He wasn't  
8 going to quarrel with the Board. So we've already answered that  
9 question. It must be by the PCI standard. Anything less is not  
10 the PCI standard.

11           And an important thing here about 61, they said 61  
12 somehow offers claim differentiation. This is something their  
13 expert came up with. Well, if you look at the standard, there are  
14 three types of information included in every PCI transaction.  
15 Three types. There's an address, there's data and then there's  
16 control. That's straight out of the standard. You have those three  
17 things.

18           There is a special type of PCI transaction known as  
19 interrupt acknowledge. In an interrupt acknowledge, the address  
20 is zeroed out. It's null. So if you look at claim 54, it says all PCI  
21 bus transactions. That covers everything. What does claim 61  
22 do? Claim 61 narrows it and says this PCI transaction has to have  
23 encoded PCI address and data bits. Claim 61 actually carves out  
24 those interrupt acknowledges. It carves out a specific type.

1           And when you look at 24, 24 and 31 are at the narrower  
2   group of PCI transaction types. They are talking about the  
3   transaction types that have an address and those are  
4   non-interrupt-based ones.

5           JUDGE FITZPATRICK: If I understand this correctly,  
6   then, it's your position that a PCI bus transaction, that term in  
7   claim 54 does not require address bits and claim 61 expressly  
8   does and that is why claim 61 is narrower and differentiated?

9           MR. STACY: Correct. Practically it carves out the  
10   interrupt acknowledge PCI transactions in claim 61.

11          JUDGE FITZPATRICK: Is there any -- there's also a  
12   rule about claim construction that terms are to be given some  
13   meaning and not read to be extraneous. Is there any reason for  
14   the last three words in claim 61, "and data bits"?

15          MR. STACY: No. I mean, with claim differentiation,  
16   there's also significant warning that what the claim differentiation  
17   tail doesn't wag the construction dog. When we pressed their  
18   expert on the basis for that construction, I asked him about the  
19   spec, I asked him about the file history, and he had nothing else to  
20   support the construction. When you look --

21          JUDGE FITZPATRICK: You had also mentioned that  
22   it's in the reply. So maybe there is no evidence but I'm going to  
23   ask anyway, is there evidence from your side about this -- what  
24   was the term you called? Interrupted?

25          MR. STACY: It's an interrupt acknowledge.

1 JUDGE FITZPATRICK: Is there evidence in the  
2 record that that refers to a PCI transaction that lacks address data,  
3 address bits?

4 MR. STACY: So your question was is there anything  
5 in the record, and I'm in a quandary there because I didn't get to  
6 put anything in. So in the record, no, because the first time  
7 anybody saw this was in the reply. But with your permission I  
8 can show you something that's in the record but not specifically  
9 briefed. This is Exhibit 2001 on page 37.

10 JUDGE FITZPATRICK: Exhibit what?

11 MR. STACY: 2001. I'll introduce what the document  
12 is. It is the PCI local bus standard Chapter 3 and it's titled Bus  
13 Operation. And --

14 JUDGE FITZPATRICK: I'm there with you.

15 MR. STACY: The piece we are looking at is Section  
16 3.1.1, Command Definition. And right up top you see the initial  
17 command, the interrupt acknowledge. So the interrupt  
18 acknowledge is a big part of the PCI because you have got to get  
19 the processor's attention or you've got to get the device's  
20 attention. Then down at the bottom we highlighted for you, the  
21 address bits are logical don't cares during the address phase. So  
22 keep in mind the PCI standard has two timing requirements and  
23 they have what they call a data phase which the data is  
24 transmitted, so it's a time, and then the address phase. And in the  
25 address phase they send the address and the control bits. So

1 during that phase the control bit, if it's an interrupt acknowledge,  
2 you can see that the address bits are don't cares. So that's the way  
3 claim 61 is narrowed. Does that answer your question?

4 JUDGE FITZPATRICK: Thank you, yes.

5 MR. STACY: So one thing I would like to make sure  
6 that as we go through this discussion that you keep in mind 54 is  
7 different than 24. Fifty-four requires the encoded serial bit  
8 stream of peripheral component Internet connect bus transaction.  
9 That includes the information necessary to make a PCI  
10 transaction under the defined standard. That includes data, that  
11 includes address except for the interrupt acknowledge, and that  
12 includes the control bits every time. So you didn't hear a word  
13 about control bits, period. There is no such thing -- just put it  
14 bluntly, there is no such thing as a PCI transaction that does not  
15 have control bits. To carve control bits out of claim 54 and 61 is  
16 to make sure it does not comply with either the standard of a PCI  
17 or the purpose of the invention.

18 So when we talk about 54, you have to talk about  
19 control bits. And not once do they talk about Horst or Bogaerts  
20 transmitting any type of control bits. Just doesn't happen. And it  
21 doesn't happen in those systems because they are actually  
22 radically different systems. We went and got our expert because  
23 he was an expert in the prior art that was cited. Those systems  
24 are for massively parallel computer systems. Bogaerts, for

1 example, was built to process the data at the CERN supercollider  
2 because nothing else existed.

3           And our expert, Dr. Lindenstruth, was the guy on the  
4 ground building that system. So he knows what these systems do.  
5 And he said over and over you can't take these virtual addresses  
6 on these serial networks and just put PCI on them. It will destroy  
7 it. It will actually cause address collisions. It will render them  
8 inoperable. The reason people like Horst and TNet came up with  
9 these systems is because PCI did not work. They had to come up  
10 with a proprietary bus. And that's said on the first page of Horst.  
11 Horst next to the picture of PCI says we considered all of the  
12 standard buses. We looked at all of them and decided all of them  
13 were insufficient. We designed our own. And Bogaerts is the  
14 same way. When you look at them, SCI and the TNet systems  
15 are both massively parallel systems. They have a proprietary  
16 network in the center that actually does the serial transmissions.

17           JUDGE WEINSCHENK: Your patents also changed  
18 the bus too, right? You said a parallel bus doesn't work so we are  
19 going to change it to a serial bus. So it's also not a standard PCI  
20 bus.

21           MR. STACY: You have got a standard PCI bus, you  
22 have got the invention, depending on how you do it, but you have  
23 got the new bus in the center, and what that's doing is taking the  
24 parallel 32 bits coming down, putting them on a serial bus,



1 moving them and then taking them back out. It's an hourglass  
2 when you think about it, here, here, transmit, go back out.

3 JUDGE WEINSCHENK: Explain to me, I think I want  
4 to make sure I understand exactly what Horst does, then. If you  
5 have got a CPU that wants to send data to a PCI device, it has to  
6 send the data and it has to send an address to where that data is  
7 going to be stored in the PCI device?

8 MR. STACY: Correct.

9 JUDGE WEINSCHENK: How does it know, if it  
10 doesn't have the address of the PCI device originally, how does it  
11 know where to send it to?

12 MR. STACY: It doesn't know that it's a PCI device. It  
13 just knows it's sending to that printer right over there. You have  
14 got whatever protocol is being done up top, in Horst it's TNet.  
15 You've got a TNet protocol. You may have something  
16 proprietary coming off the processor. There's no PCI transaction  
17 that exists on the processor. It's then -- in Horst it's then  
18 translated using these virtual address tables sent across the serial  
19 bus, picked up by another smart device down here that generates  
20 the physical address and ships it off.

21 But I understand the appeal of saying, well, I say print  
22 and it prints, therefore, it must be done. And if our claim was that  
23 broad, that might be a problem, but the claim is actually to solve a  
24 specific problem with systems using PCI. And that's the reason  
25 that PCI standard matters.

1           But if you look at any of these devices, Horst, Bogaerts,  
2   there's no PCI standard or there's no PCI address that is somehow  
3   being packaged or encapsulated and shipped across the serial line  
4   and unpacked down here because this device simply does not  
5   know. The CPU simply does not know what the address is for  
6   this down here. That's created and that was the document I  
7   showed you. That's created through the address table and the  
8   virtual address. You never ever in these systems are starting with  
9   PCI. You just aren't.

10           JUDGE WEINSCHENK: So you are saying this isn't as  
11   simple as having a PCI address dropping off a few bits and then  
12   adding them back on the other side?

13           MR. STACY: No. And in fact, the documents that are  
14   from these same set of authors talk about one of the major  
15   difficulties is handling this address translation. And that's why  
16   we were so angry about the withheld documents because those  
17   withheld documents by the same group of people show  
18   unequivocally that it is a difficult process. And the reason --  
19   because you are having to manage all of these addresses across  
20   these big parallel systems. It's just, these systems are simply not  
21   like the system that was improved here. This is more related to  
22   personal computers, smaller, non-massively parallel systems.

23           So with that, let me go back to slide 10. I'm going to  
24   skip through. I think we answered a lot of the questions, but this  
25   is the one piece I did want to focus on and that is this. So this

1 was the Board's original construction and this is what's key, is it  
2 peripheral -- PCI industry standard bus transaction. So when we  
3 move away from that industry standard bus transaction, we are  
4 moving away from this preliminary construction.

5 And we know this preliminary construction is right. I  
6 can tell you it's right, but I might have my own agenda here. But  
7 this right here is from Mr. Young, petitioner's own expert. And I  
8 just want to make sure that you see the exact language so there's  
9 no debate that PCI transaction is defined by the standard.

10 So this was Mr. Young. That's pretty clear that when he  
11 got to his reply, he abandoned his original construction, applied  
12 yours. And just in case, because I was surprised I got it the first  
13 time, I asked him again to make sure we were crystal clear, same  
14 reply. This is after he had had a chance to look at everything: I  
15 think it is the broadest reasonable interpretation. It's not  
16 inaccurate. This is -- it's the broadest reasonable -- it's a good,  
17 broad, reasonable interpretation.

18 So this issue should be closed. There's no dispute on  
19 this at this point in time. We are living with a PCI standard. And  
20 what petitioner has tried to do is say, okay, we are stuck with the  
21 PCI standard, but we only need two bits of that address. We are  
22 going to drop back and apply a brand new construction and say,  
23 well, okay, you don't have to send the whole PCI address. Just  
24 send a couple of the bits. As we've talked about, that's not a PCI

1 transaction. That has nothing to do with the purpose of these  
2 claims.

3           What you have done is actually you have created  
4 something brand new. And TNet and Bogaerts are very clear that  
5 they have created a brand new proprietary protocol rather than  
6 using the standards, which is what's really going on here, to have  
7 standard on the front end, standard on the back end and a serial  
8 link in between. And you just don't see that with Horst or  
9 Bogaerts. There's no standard on the front end that drives a  
10 standard transaction on the back end.

11           And that Scrabble cube example is not mine. It actually  
12 came from their expert. And I think it's important that we focus  
13 on what their expert said at the beginning and how he changes  
14 position later because that Scrabble cube analogy was something  
15 that came out of his original declaration or the deposition on his  
16 original declaration. Later he backed away from it.

17           So just to be clear, Dr. Lindenstruth is the parallel  
18 processor expert. He is the guy that helped build the CERN  
19 system. Horst is right there similar to it. And he was very, very  
20 clear. The LVDS channel, that's the serial channel, does not  
21 transmit address and data bits of PCI bus transaction. This is the  
22 guy that knows.

23           JUDGE TIERNEY: A standard PCI bus transaction?

24           MR. STACY: Correct. If the Board moves away from  
25 the construction that it originally had and the construction that

1 their expert agrees to and says it doesn't have to be a PCI  
2 standard, then we have a different issue.

3 JUDGE WEINSCHENK: I have a question. I'm not  
4 sure if you have this in your slides, but I was looking at Figure 8  
5 of the '873 patent.

6 MR. STACY: If you give me 30 seconds, I'll pull it up  
7 and put it on the board for us. Did you say Figure 8 of the '873  
8 patent?

9 JUDGE TIERNEY: Yes.

10 MR. STACY: What was your question?

11 JUDGE WEINSCHENK: I think it helps to look at the  
12 figure, but to me it looks like we may have something that at least  
13 on its face looks similar to what's in Horst. I'm curious if you can  
14 explain to me why it's different because now that it's up there,  
15 you can see we have on the computing side, the CPU side, we  
16 have a CPU connected to an interface and then we've got a sort of  
17 serial channel, I assume, between the two. And the first  
18 appearance of a PCI bus is on the peripheral side, and it looks to  
19 me that it's very similar to what we've got in Horst where the first  
20 appearance of a PCI bus is in the peripheral side.

21 MR. STACY: If you are comparing drawing to  
22 drawing, they superficially look exactly the same. But when you  
23 look at what's really talking about this -- and keep in mind, the  
24 patent isn't limited only to -- let me phrase this correctly. The  
25 specification is not only PCI. It talks about other types of

1 communication protocols also. But the point here is -- actually,  
2 this point is there's no intervening PCI bus. But when you look at  
3 this and when you read it, there is a PCI transaction here that is  
4 Scrabbleized and then put on the serial link and then recreated  
5 back here. There's nothing inconsistent with the claim here.

6 And again, it looks -- you can abstract any computer  
7 system to this level. You've got to look under the covers. If you  
8 are going to comply with the PCI standard, which I believe  
9 Figure 8 is a PCI limited embodiment, I would have to confirm  
10 that, you need to take the PCI transaction on the front end,  
11 serialize it and do the PCI transaction on the back end. That's this  
12 embodiment. By the way, if you look at this, this is a computer  
13 system. Not this massive parallel system.

14 JUDGE WEINSCHENK: Does there need to be a PCI  
15 bus on the CPU side or does it just have to be something you can  
16 call a PCI address and data or do we actually need a bus there? I  
17 think you have argued in your papers that you need a bus. That's  
18 what I'm curious about because this one doesn't show a bus on the  
19 CPU side.

20 JUDGE TIERNEY: Let me direct you to page 5 of  
21 your patent owner response.

22 MR. STACY: I think it may depend claim by claim.

23 JUDGE TIERNEY: Patent owner response of the 1462  
24 case.

25 MR. STACY: Page 5 you said?

1 JUDGE TIERNEY: Yes. Figure 8 illustrates that.

2 MR. STACY: Correct, there's no PCI bus.

3 JUDGE TIERNEY: And consequently the TNet link  
4 does not generate PCI bus transactions or PCI transactions at the  
5 CPU side.

6 MR. STACY: Correct. I think that's a description of  
7 Horst. You don't have to have the PCI bus. The PCI bus is a  
8 good indicator. But what we know from Horst, their own expert  
9 agrees, there is no indication there's a PCI transaction on the  
10 processor side within Horst.

11 JUDGE TIERNEY: So can you relate that information  
12 that we just discussed that is on the CPU side there's no PCI bus  
13 with Figure 8 of your patent in the '873 patent?

14 MR. STACY: So on Figure 8 of the '873 patent, you  
15 have to look at the text. It's talking about a PCI transaction. And  
16 so the claims don't require a bus. They require a PCI transaction  
17 to take place. You are looking at the standard the whole time.  
18 I'm putting a transaction together that looks like a PCI  
19 transaction. So all of my PCS-compliant drivers know how to  
20 read it. So I have created my PCI transaction. That's why it  
21 matters, my drivers can read it. And then I'm taking it at a  
22 parallel form, putting it into serial form and then back to parallel.

23 The point about Horst is that Horst doesn't have a PCI  
24 transaction that is then serialized. And one indicator is that  
25 there's no PCI bus but it makes no difference whether there is.

1 You could generate a PCI transaction without a bus. The point is  
2 and when you looked at the -- remember the sheet that I showed  
3 you, the transaction is defined on what data goes where.

4 JUDGE TIERNEY: But the way it was worded was  
5 basically what I was reading was because there's no PCI bus on  
6 the CPU side, the TNet link does not generate PCI bus  
7 transactions.

8 MR. STACY: That is the description of Horst there.

9 JUDGE TIERNEY: Then I look over at Figure 8 and I  
10 don't see a PCI bus on the CPU side.

11 MR. STACY: So in Figure 8 the illustration -- I mean,  
12 all of these are kind of at cartoon level. Figure 8, when you  
13 match it with the description, it's talking about the type of  
14 transaction. So you are starting with your PCI transaction and  
15 converting it. There are a lot of things that aren't shown in a  
16 seven-box drawing. But the point is if you are trying to match it  
17 to the claims, you are taking a PCI transaction and serializing it.  
18 That's what you are starting with.

19 JUDGE WEINSCHENK: Can you explain to me again  
20 how we know in Horst that the CPU doesn't start with a PCI  
21 transaction and scramble it into a TNet and then re-unscramble it  
22 to a PCI? So the lack of a PCI bus is not determinative is what  
23 I'm hearing you say.

24 MR. STACY: That's correct. The lack of a PCI bus is  
25 indicative but not determinative. In this particular instance they



1 have been able to point to nothing that shows that there's a PCI  
2 transaction ever generated. Processors have their own proprietary  
3 buses and proprietary formats. And when we pressed their expert  
4 showing where is that PCI address, and I showed you the quote  
5 earlier, where is the PCI address in Horst? And he said it's  
6 nowhere. It's nowhere. I can't find it anywhere, but it would be  
7 obvious. It would be simple to put it in.

8           And Dr. Lindenstruth who builds these kind of systems,  
9 this is his expertise, said you can't use it. You can't use a PCI  
10 address on a serialized bus in these type of systems without  
11 rendering it inoperable. You are going to run into address  
12 collisions. You are going to have terrible problems.

13           So they walked away from the 102 side of it saying it's  
14 there and went to obviousness. And the obviousness, if you look,  
15 Mr. Young, their expert, is a man that's knowledgeable about  
16 PCI. Our expert, Dr. Lindenstruth, builds these systems. He's a  
17 professor of parallel processing and he said you can't do it. It's  
18 not obvious. It will break it every time.

19           And so what we have is just their word for it. If you  
20 look at the observations on cross, we pressed him, said, could you  
21 find a single document that showed it was obvious to take a PCI  
22 address and just dump it in on these links? He said, no, I couldn't  
23 find a document. Could you find a witness? Couldn't find a  
24 witness. How do you know? Because I'm an expert.

1           And that's not really entitled to much weight. He's not  
2   an expert in these types of systems. And again, that came in the  
3   reply brief when we didn't really have a chance to address it. We  
4   went through that about putting in more evidence to address it.

5           But the point being here there's absolutely nothing in  
6   TNet or Bogaerts that they argue shows that you are putting a PCI  
7   address on that serial link. That's the reason they walk away from  
8   that and go to obviousness and use that language, it's simple, it's  
9   trivial. Any time anybody starts using those big words, you know  
10   that they are in trouble. But then they walk away from that and  
11   say, well, if you had two bits of a PCI transaction, that would be  
12   enough. Well, even if that's right, it doesn't address claim 54  
13   because claim 54 requires a PCI transaction. Got to have control  
14   bits.

15           And for claim 24 and 31, the address, but you got to  
16   have them all because you are going by the PCI standard. Go  
17   back to your phone, because you had a standard, you know what  
18   it means. The PCI standard is the same way. PCI says 32 bits.  
19   These guys for these parallel systems don't want to use physical  
20   32-bit addresses like the standard describes. Why? You get  
21   collisions.

22           And if you look at the front of Horst, the front of Horst,  
23   I think, tells you everything you need to know, is that he  
24   considered PCI and said no. I'm going to build my proprietary  
25   link in the center because they weren't interested in speeding up a

1 PCI standard transaction. They were interested in hooking up  
2 massive systems.

3 JUDGE FITZPATRICK: I have a question about we  
4 can look at claim 54, and the phrase "encoded serial bit stream of  
5 peripheral component interconnect PCI bus transaction," in that  
6 phrase would it be fair to summarize your construction of the  
7 word "of" as "from" and petitioner's as "for" such that you are  
8 arguing, I think, that the encoded serial bit stream must have  
9 originated from a PCI to begin with. Whereas, petitioner is  
10 arguing that in Horst you meet that limitation because that bit  
11 stream encodes for a PCI bus transaction.

12 MR. STACY: I would quarrel with any indication that  
13 we said it has to originate. I'm not sure what originate means. In  
14 this instance, what that claim requires is that it is a PCI bus  
15 transaction. That is defined by the standard. You know the three  
16 portions: Address, data and control. And you have to take that,  
17 whatever that would be in a parallel form and you are going to  
18 encode it, encode a serial bit stream. So I'm taking the  
19 transaction data, I don't think it matters where it originates from,  
20 then I'm going to take it, I'm going to serialize it and then send it  
21 out over my serial bus for speed purposes. That's why you're  
22 doing all this.

23 JUDGE FITZPATRICK: Let me rephrase. I didn't  
24 mean to put any special meaning to originate. Let me put it this  
25 way. Your construction, I think, in claim 54 is that you have to

1 have a peripheral component, a PCI bus transaction, and then  
2 after that point in time you have to have an encoded serial bit  
3 stream of it. And that is lacking in Horst.

4 MR. STACY: I'm working through the timing on that.

5 JUDGE FITZPATRICK: I'm focusing on the word  
6 "of."

7 MR. STACY: So your questions is the starting point is  
8 a PCI transaction. It's encoded. Is that the question?

9 JUDGE FITZPATRICK: Yeah. This kind of relates  
10 back to your hourglass statement earlier.

11 MR. STACY: So, yes, that's the point. You have to  
12 encode, have the encoded PCI transaction. So it is the hourglass.

13 JUDGE FITZPATRICK: And Horst would have -- I  
14 think maybe you concede that Horst has the bottom half of your  
15 hourglass analogy, correct?

16 MR. STACY: No, I wouldn't. Horst creates a logical  
17 system and that was the withheld document I showed you with  
18 the address virtualization table. It creates a physical address on  
19 the bottom side with a special device. And I believe that's  
20 Figure 9, if I'm doing it off memory. So it creates it at the very  
21 end. The physical address exists at the end of the process. It  
22 doesn't start at the beginning. So in other words --

23 JUDGE FITZPATRICK: Also looking at claim 54, I  
24 notice that it's the computer module that has to comprise the  
25 elements of the claim, one of them being the LVDS. And it's on

1 that LVDS channel where this data has to exist. And so is the  
2 argument that in Horst by the time the data, by the time there is a  
3 PCI bus transaction, you are already outside the computer  
4 module?

5 MR. STACY: So it's actually even more stark than that.  
6 On Horst, by the time you have a PCI bus transaction, you are on  
7 a parallel PCI bus. You are back at the bottom of the hourglass.  
8 So when you pull up those figures, you'll see you have got a PCI  
9 bus, a formal PCI bus hooked to your printer or your storage  
10 device or whatever. So at that point down there, you are back to  
11 a parallel system. So the question is, does the PCI bus transaction  
12 ever exist in serialized form? The answer is no.

13 JUDGE FITZPATRICK: Thank you.

14 MR. STACY: So I'm approaching 45 minutes. Are  
15 there any other questions that I should answer?

16 JUDGE WEINSCHENK: Nothing from me.

17 JUDGE TIERNEY: None here.

18 JUDGE FITZPATRICK: No.

19 MR. STACY: Then the thing I would like to leave this  
20 with is that the prejudice here is pretty severe in that petitioner  
21 came in with one construction originally. They knew of two.  
22 They were briefed in the District Court. They had their expert  
23 adopt one construction that said, hey, the PCI standard doesn't  
24 matter. And then they came in, let us oppose, and in their reply  
25 brought in a whole host of new arguments. The first thing they

1 came in with was, well, if it's not there, it's obvious to put in and  
2 you see the new simple and trivial language. You notice in the  
3 observations of cross we submitted over and over their expert  
4 said that wasn't in my original petition. We thought about it,  
5 didn't put it in.

6 So you have got the new obviousness argument and  
7 then you've got this brand new two bits construction. So I think  
8 unfortunately, by reg, I'm required to raise the objection under  
9 due process that we didn't get to fully address that.

10 JUDGE TIERNEY: Counsel, were you offered and  
11 took the opportunity to file a sur-reply?

12 MR. STACY: No, I was not. I asked to file a full  
13 sur-reply and the Board said no and said you can have three pages  
14 to specifically address the withheld documents. And counsel  
15 clarified that that was all that could be done.

16 JUDGE TIERNEY: You filed the sur-reply on that  
17 issue. So we are talking about due process here. You did file  
18 approximately 14 pages of observations in both cases.

19 MR. STACY: Yes. I don't know the exact number, but,  
20 yes.

21 JUDGE TIERNEY: So you were able to take the  
22 deposition and file the portions that you wanted us to review.

23 MR. STACY: I was able, yes, to take the deposition  
24 and file portions. Was not able to develop evidence. And we

1 made the offer of proof that what Dr. Lindenstruth would have  
2 said that disagreed with their expert.

3 JUDGE TIERNEY: Furthermore, did you take  
4 advantage of and file a patent owner motion to exclude  
5 identifying new arguments in reply?

6 MR. STACY: We did. And this due process issue  
7 would only be a point is if the Board considered all of their new  
8 arguments. If the Board followed the rules and returned the  
9 reply, then our prejudice would be fixed.

10 JUDGE TIERNEY: And if the Board determines they  
11 are not new arguments in the reply but rather responsive  
12 arguments, how would there be a due process violation?

13 MR. STACY: Because we were not allowed to address  
14 responsive arguments as responsive arguments are so limited.  
15 There's nothing in these rules or the Administrative Procedure  
16 Act that allows an open reply. And in fact, the rules  
17 specifically --

18 JUDGE TIERNEY: But if it's responsive, how is it an  
19 open proceeding? It's supposed to be narrow. It's supposed to be  
20 narrow and it's responsive to the arguments that you have raised.

21 MR. STACY: The CFR requires that the petition state  
22 all of the grounds. And the cases from this -- from here and from  
23 due process say not only no bolstering but no new arguments.

24 JUDGE TIERNEY: But a new argument would be by  
25 definition, if we determined it was not an argument, we would by

1 definition say that it was not necessary to make out a prima facie  
2 case.

3 MR. STACY: We would have to see how that plays  
4 out. If you say it's not a new argument and don't consider it, of  
5 course that means there's no prejudice. But if you say it's not a  
6 new argument and then use that as a basis, we never got to submit  
7 evidence on it. So I apologize for taking your time with this  
8 issue, but I think to keep the record preserved, I have to do it.

9 JUDGE TIERNEY: Is there anything further you  
10 would like to add about the alleged new argument? Again, we  
11 are trying to avoid prejudice.

12 MR. STACY: The only thing I could add is attorney  
13 argument. We asked to submit the declaration from  
14 Dr. Lindenstruth talking about why the two bits and focusing on  
15 many of the issues that we addressed today, why two bits was  
16 wrong, why it's not obvious to substitute it in, and the Board did  
17 say no to that request.

18 JUDGE TIERNEY: I just want to point out regarding  
19 due process, all good things must come to an end. So there has to  
20 be a point at which we have to stop the evidentiary submissions.

21 MR. STACY: I do understand. And I understand that  
22 the Board has specific rules where they can return the reply brief.  
23 In other places they have said no. And there are procedures that  
24 could have been followed in this instance. Since both of these  
25 constructions were foreseeable and foreseen, they could have



1 filed two petitions initially. They could have use the pages to  
2 address both constructions. They could have done the  
3 self-joinder. They could have filed an issue joinder or they could  
4 have simply asked the Board how do we address this from the  
5 front end and then we could have addressed it there. Instead they  
6 chose to lob in all of the new arguments in the reply brief. There  
7 are ways to do this. We all know how to do them if you want to  
8 make sure that the process is fully done.

9 JUDGE TIERNEY: Thank you.

10 MR. STACY: Thank you.

11 MR. BUROKER: Your Honor, I wanted to address a  
12 number of the points sort of in serial fashion, but if there's any  
13 additional questions, I would rather use the time for that to  
14 answer the questions you have.

15 The first point was testimony about Dr. Lindenstruth.  
16 He didn't have any knowledge about the library procedures at  
17 CERN. He knew that the data was submitted in committee.  
18 When asked if he knew about the procedures for when it was  
19 submitted to the library, he said, I know nothing about that. So  
20 we think that the document which says submitted by October 2,  
21 1996, is sufficient to show that that's when it was submitted to the  
22 library.

23 The second point, they try to draw a distinction between  
24 what they call Bogaerts 1 and Bogaerts 2. I think the question is  
25 whether this document was publicly available. And there's two

1 different versions. It would be no different than if we had a  
2 newspaper article and one version was received from the  
3 microfilm and another version was the actual hard copy, two  
4 versions of the same document. The question would be whether  
5 that document was printed publication. We think all of the  
6 evidence goes to whether or not the Bogaerts substance was a  
7 printed publication.

8 JUDGE WEINSCHENK: If we focus on the version  
9 that you found in the Wayback Machine, is there any evidence in  
10 the record that would indicate that someone searching for that  
11 could have found it or that it would have been indexed on the  
12 Internet in any way or that it was just available on some server  
13 somewhere?

14 MR. BUROKER: Well, the version that we found on  
15 the Wayback Machine, there is the versions on the RD-24 where  
16 there's a link that says here is the complete report. And then there  
17 is, as Mr. Stacy talked about, the eight postscript files. That eight  
18 postscript-file page where you can retrieve those postscript files  
19 was on the Wayback Machine. We think that this Board and  
20 other Courts have taken judicial notice that that indicates that it's  
21 publicly available and searchable. The text that those postscript  
22 files are on talks about the report and has some subject matter  
23 indications. But do we have any additional evidence beyond  
24 that? No. The declaration from the Internet archive is the

1 evidence we would have of its availability to be found by a search  
2 engine.

3 Third quick point, there is some talk that the  
4 information from the Wayback Machine was on a personal  
5 server. That's just not true. If you look at the URL, it's a server  
6 hosted by CERN, which is a Swiss organization. That's not  
7 somebody's personal server.

8 There was a suggestion again that we withheld  
9 evidence. I think we addressed that in the Board call earlier in  
10 this case. This is documentation that was provided to the patent  
11 owner during litigation. It was not withheld.

12 They have argued that it's inconsistent. We don't  
13 believe it is inconsistent. We believe that document shows that  
14 ServerNet 2 which is a later version, so you had TNet, you had  
15 ServerNet and you had ServerNet 2, that document is talking  
16 about the ServerNet documents and whether they used virtual  
17 addressing and if so, what kind of virtual addressing. It says  
18 typically you use a fewer number of bits. Typically means not  
19 always. And it's not inconsistent with Mr. Young's testimony that  
20 one way to do it would be to use all 32 bits.

21 There was a lot of discussion once we finally got into  
22 the merits about what the claims actually show. If I could put up  
23 slide 6, please, the claims don't, again, require that a PCI bus  
24 transaction be sent and received and acted upon. This claim talks  
25 about conveying that information. And what information for

1 claim 24? It's the address and data bits of it. As we saw at length  
2 and your questioning of counsel for the patent owner, 54 has  
3 slightly different language which is an encoded bit stream or  
4 serial bit stream of PCI bus transaction and that's in slide 7.

5           Again, this is the first we are hearing that claim 54  
6 doesn't even require the address bits. But if that's true, then  
7 certainly Horst and Bogaerts -- Horst which is the only one  
8 applied against claim 54 disclosed transmission of the data. Now,  
9 I heard that now claim 54 is rewritten to require the control bits,  
10 but that's not expressly stated either. And that's certainly not  
11 expressly stated in the Board's construction of the PCI bus  
12 standard transaction that was offered in the institution decision.

13           So again, we have a disconnect between what the claims  
14 actually say that we need to find in the reference, and that's the  
15 important distinction that the Board should focus on.

16           JUDGE FITZPATRICK: In all three independent  
17 claims, maybe there's more, but 24 and 31 in the '814 patent and  
18 54 in the '873 patent, they all refer to either an encoded serial bit  
19 stream or address and data bits. And then the next term is "of"  
20 PCI bus transaction. You heard me inquire with opposing  
21 counsel about this. What does "of" PCI bus transaction mean?

22           MR. BUROKER: Your Honor, you posited does it  
23 mean for or from. And I would argue actually having never  
24 thought about that issue before, but in hearing the question, I  
25 think it actually does mean for or from, that you can read of PCI

1 bus transaction as being for a PCI bus transaction, but you could  
2 also meet the claim if it was from a PCI bus transaction. The  
3 word "of" there is meant to be a broad term to describe either of  
4 those circumstances. At least that's how I would read this claim.  
5 I think that's consistent with our view, particularly when you read  
6 our briefing --

7 JUDGE FITZPATRICK: In the species of your  
8 construction from, the from species, would Horst not read on this  
9 claim? Would you concede that this claim does not read on  
10 Horst? This claim being 54.

11 MR. BUROKER: Well, again, Your Honor, we believe  
12 we've put in evidence that says if the CPU were to communicate  
13 with a PCI bus transaction, it would create a PCI bus. At least it  
14 would create the address and data fields, fill those into the TNet  
15 and send those down to the PCI bus side. That's one reading.

16 The second one is that on the return side, and we didn't  
17 hear any discussion about the return, but the PCI bus is going to  
18 respond. For example, if it's a read request, it's going to respond  
19 back to the CPU side. That PCI information will be received at  
20 that north bridge. In that case, it would be from a PCI bus  
21 transaction that originated on the peripheral side but it would still  
22 hit the north bridge.

23 And to your other question, it would still be received at  
24 the CPU over this second LVDS channel. So it's the return path

1 gets you there in addition. So I wouldn't concede that Horst  
2 doesn't meet the from reading.

3 JUDGE FITZPATRICK: Thank you. Let me follow up  
4 and focus on claim 54. The other claims might have something  
5 analogous, but claim 54, don't you have to have the  
6 communication in both directions? So if it's from, don't you have  
7 to have it from the computer module and then also from the  
8 peripheral?

9 MR. BUROKER: Well, it says you have to transmit  
10 data in opposite directions. And then there's a second clause that  
11 talks about communicating bit stream. So data has to go in both  
12 directions, but I would argue that the PCI information only has to  
13 go arguably in one. The communication could be either. So  
14 there seems to be two different requirements, transmission of data  
15 and then you communicate an encoded serial bit stream of PCI  
16 interconnect bus transaction. That could be one direction. So I  
17 read it a little differently, Your Honor.

18 JUDGE FITZPATRICK: Okay. Thank you.

19 JUDGE TIERNEY: Since we are on claim 54 and other  
20 claims, you have been discussing today a little bit about what a  
21 PCI standard transaction requires and it's been argued that a  
22 physical address is one of the requirements for a PCI standard.  
23 And for example, looking at the Lindenstruth declaration,  
24 Exhibit 2021, paragraph 103, they distinguish Horst on the basis

1 of not having a physical address. Could you address that  
2 argument, please.

3 MR. BUROKER: So the argument is, again, this goes  
4 back to what the claim requires. We agree that somewhere in the  
5 system there is a PCI bus transaction and that there is an address  
6 and that that address is a physical address within the PCI bus  
7 space. We agree with that.

8 But what has to be transmitted is merely the address or  
9 data bits of that transaction. It doesn't have to be a physical address.  
10 Our argument is that this is broad enough to cover taking a  
11 physical address, virtualizing it, if you would, and transmitting  
12 the virtual version of the physical address. So we don't agree  
13 with Dr. Lindenstruth's reading of this claim. We agree the PCI  
14 standard itself does require a physical address. Hope that -- that's  
15 my answer to your question.

16 JUDGE WEINSCHENK: Is there any evidence in the  
17 record that Horst takes a physical PCI address and virtualizes it?

18 MR. BUROKER: Well, that's what's taught in -- so  
19 there's definitely in Figure 2 there's the PCI bus on the right-hand  
20 side. So we know there is a PCI bus transaction that would be  
21 created. And then Figure --

22 JUDGE WEINSCHENK: I think what I understand  
23 patent owner's argument to be is that it just starts with a virtual  
24 address and then creates a physical address for the first time down  
25 in that bottom right-hand corner of Figure 2.

1           MR. BUROKER: So then on page 7 under the bus  
2 interface on the left-hand column of Horst, it says that Figure 8  
3 shows a block diagram of the TNet bus interface. The TBI  
4 translates transfers on the standard bus, which in this case the  
5 standard bus is the PCI bus, into TNet read or write transactions.  
6 So it's saying whatever the standard bus, and it gives examples of  
7 PCI and VME and Motorola 68040, whatever that standard bus is  
8 will translate that into TNet. So there would be a translation from  
9 the PCI bus into the TNet.

10           JUDGE WEINSCHENK: That's only in one direction,  
11 though, right?

12           MR. BUROKER: That would be in one direction.  
13 Certainly there's also an interface on the processor interface that  
14 would -- in Figure 7 which would do it on the return path. There  
15 would be a translation. And granted, that's not as explicit because  
16 the way that the reference would be read, if you are going to  
17 communicate with a PCI bus device, you have got to transfer  
18 information that the PCI bus could use to understand where it was  
19 intended to be received.

20           JUDGE TIERNEY: Just for simplicity purposes when I  
21 review this, what piece of evidence should I be directed to that  
22 shows that virtual addresses would be encompassed in  
23 combination with the use of a physical address to form this PCI  
24 standard transaction?



1           MR. BUROKER: Well, I know for certain in the  
2 opening petition and the related citation, Mr. Young discusses the  
3 text that talks about that each --

4           JUDGE TIERNEY: I do have Mr. Young's declaration  
5 in front of me, his reply declaration. Is there a paragraph or  
6 paragraphs you would like me to focus in on?

7           MR. BUROKER: I don't have that -- let me check with  
8 my colleague real quick. So paragraphs 30 through around 31  
9 where he talks about the person of skill in the art would  
10 understand that in addition to taking the 32-bit and address from  
11 the PCI bus and inserting it into the A field, a person with skill  
12 would know how to do one-to-one mapping which is essentially  
13 one-to-one mapping as a kind of virtual addressing.

14           If there are no further questions, thank you for your  
15 time, Your Honors.

16           JUDGE WEINSCHENK: Nothing further from me.  
17 Anything from Judge Fitzpatrick?

18           JUDGE FITZPATRICK: Nothing. Thank you.

19           JUDGE WEINSCHENK: We are going to give patent  
20 owner one opportunity to respond to anything that petitioner just  
21 raised if you have anything you would like to the add.

22           MR. STACY: Thank you. I'll be very, very brief.  
23 Slide 50. So the issues that were just raised were all regarding  
24 TNet. I want to point, this was what Mr. Young said in his reply.  
25 So point me to specific language which has a PCI address as

1 mapped in the TNet. Couldn't do it. So there is no express  
2 teaching. You have to go to obviousness. And the obviousness  
3 argument was not made in their original petition. This is  
4 something they are now throwing out there. You won't find it in  
5 the original petition.

6           What we do know, and again, I have to argue this  
7 through attorney argument because we don't have the expert  
8 evidence and I apologize, Judge Tierney, but we know. This  
9 piece from ServerNet 2, which if you look at the front page of  
10 ServerNet 2, it says it's backwards compatible. This is as close as  
11 we get to a true understanding of how TNet works. You don't see  
12 that hourglass.

13           Remember I said the hourglass, you start with the PCI,  
14 you got the parallel bits, serialize them, get them to the other side,  
15 push them back out. What do we know? We know that the first  
16 time that the local physical address exists, the first time you know  
17 the physical address for that printer down over here is at the end  
18 of the process. And you can see it over on the left-hand side.  
19 Once at the destination N node the address is translated to  
20 produce the local physical address. Remember the Scrabble  
21 cubes, it's actually made up at the far end because what are you  
22 using? Address, validation and translation table that is in that  
23 logic on that bus.

24           So the first time you ever see a parallel PCI or parallel  
25 PCI address or any type of PCI address is on the bottom end. It's

1 generated in parallel. Parallel, serial, parallel. What this shows  
2 in Horst is parallel exists down here.

3 And they use a whole lot of logic up here to go through  
4 their virtual addresses. Why do they do that? Because the  
5 number one reason these references exist is for massively parallel  
6 systems. Think about the CERN supercollider. That's what these  
7 systems are for. And what do they want to do? They want to line  
8 up a row of processors and have them be able to access each  
9 other's memory, access the resources. If you use standard 32-bit  
10 PCI address, guess what. You got a real problem in a hurry when  
11 you start lining up multiple processors. That's why you don't  
12 have a PCI address on the top end. It doesn't work for these  
13 massive parallel systems. And we know that because we got the  
14 expert in parallel systems. Dr. Lindenstruth isn't just the PCI guy.  
15 He's the guy that built these parallel systems. He knows and he  
16 says you can't do it. There is no PCI transaction that's being  
17 serialized and then pushed out.

18 JUDGE WEINSCHENK: Thank you very much.

19 JUDGE FITZPATRICK: No further questions from  
20 me. Thank you.

21 MR. STACY: Thank you.

22 JUDGE WEINSCHENK: We conclude the hearing and  
23 this is adjourned. Thank you very much.

24 (Whereupon, the proceedings at 2:44 p.m., were  
25 concluded.)